

DART 411



An overview of our Open Source student information system that is free like a puppy!

DART :: Data Analysis & Reporting Toolkit :: February '09



What is DART?

BSSD's standards-based reform model required a level of data transparency not found in commercial products. The model of instruction we use views data use and instruction as inseparable, and a system was needed that could inform instructional planners, not just report on student progress on standards at the end of a marking quarter.

The Data Analysis & Reporting Toolkit - or DART - is a web based tool that manages both instructional and accountability data for a standards-based school district.

- **DART is Modular** - Rather than telling users what data they need, users contribute modules that solve problems.

DART tracks student progress through our nine Content Areas, and the various levels within each. Groups can be quickly and easily created by any teacher or administrator.

Each standard and assessment task which makes up a level is tracked for the group, and each user gets individualized data about group and individual progress. Students, teachers and parents can all view progress via the web in real time.

An Essential Connection to Instruction

Instructional needs and weaknesses are highlighted using a technique called "tag clouding" to produce weighted lists of high value "target" standards for instruction or learning.



Weighted List of Standards & Assessments Needed:



RE4.2-Vocab in Context & Parts of Speech :: RE4.14-Basic Genres :: RE4.10-Draws Conclusions & Inferences :: RE4.13-Comprehends Text {SRI 590} :: RE4.9-Follow Instructions :: RE4.3-Classifies / Categorizes in List Form :: RE4.11-Short Answers :: RE4.4-Fluency 114 wpm :: RE4.5-Recognizes Sight Words :: RE4.1-Syllabification ::

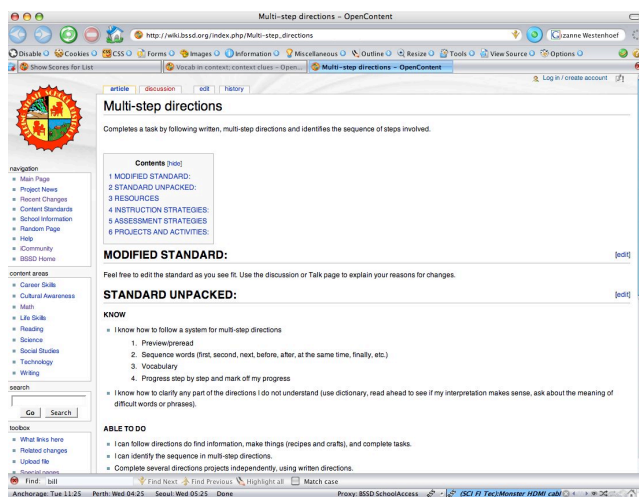
Highest instructional needs are calculated automatically for any individual or group, and hot-linked to BSSD's Open Content Curriculum system.

Each need links to the resources needed to learn that standard. The Open Content Curriculum now houses over 11,500 pages of content, resource materials and rubrics.

What Makes DART Unique?

DART is a database system which allows the tracking and reporting of learner progress on a series of goal areas. It is unique for four reasons:

- **DART is totally learner-centered!** - DART does not rely on teacher and student schedules since the data follows child.
- **DART is flexible!** - The system can track any standards or outcomes for an organization, and assist in RTI monitoring.
- **DART is Open Source** - This means it is free to download, use and modify for any organization. Development and support takes place by the community of users themselves.



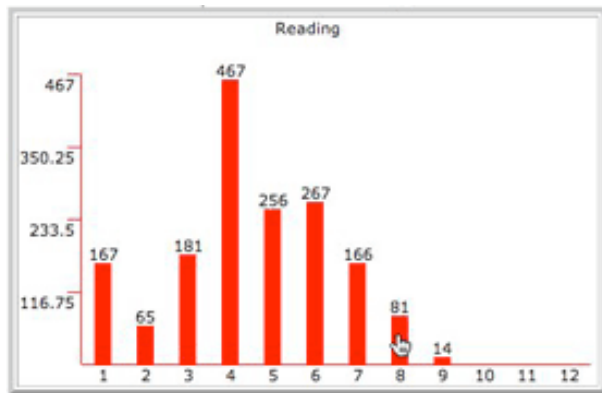
Data Visualization Tools

The DART interface allows users to easily view their site or district data, as well as to drill down into disaggregated data, visualize patterns of performance, and layer other key variables such as attendance, discipline in real time as needed.

Student progress scatter plots show distribution of learners viewed by the building or the district level, and can be “drilled down” into for intervention planning.



A variety of visualization tools display patterns in charts, as well, and the same “drill down” functionality is maintained.



The overall health and functioning of a school, or the district can be tracked by those with proper permissions in the DART Dashboard.



Discipline, attendance and school entrance and exit variables, and student progress milestones are similarly hot linked by a click to a list of students.

Continuous Progress Reporting

Our mastery approach to curriculum requires that the learner, the learners' parents, and his or her teachers be able to access accurate and timely information on progress.

Student standards data is reported live to students and parents, but is also available through detailed quarterly reports that provide far more insight into student strengths and weaknesses than traditional “report cards” used to do.



Level Progress Descriptors				Quality Performance Indicators	
ADV	Advanced - Student exceeds mastery expectations and is able to extend his or her knowledge to make new connections in this content area.	Exemplary	Student is a self-directed learner and exceeds teacher expectations in all areas of work quality, progress toward mastery of standards and timelines for class work.	Acceptable	Student performance met teacher expectations in the following areas: quality of work, progress toward mastery of standards, meeting both timelines for class work.
PRO	Proficient - Student has demonstrated mastery of all standards, all student assessments have been passed, student demonstrates real world application.	Acceptable	Student is attempting to make progress but has not met one or more of the expected outcomes for "acceptable."	Below	Student is making little or no progress due to the lack of performance or participation, this content was not taught during the last quarter.
EMG	Emerging - Student is beginning to acquire the knowledge necessary to demonstrate the expected mastery of standards in this area.	Not Acceptable	Not instructed in this area.		

Both standards-based, more traditional transcript data formats can be used. Carnegie credit approximations are provided for students transferring to other schools, or applying to traditional colleges and universities.

Student progress toward graduation through BSSD's Content Areas is tracked automatically, and students and parents can view Pacing Guide report at any time showing graduation status.

The screenshot shows a Pacing Guide report for James B. Smith, 2006-08-01. It displays progress across various content areas (e.g., Cultural Awareness, Career Skills, Life Skills, Mathematics, Reading, Science, Social Studies, Technology, Writing) with columns for different levels of mastery (e.g., Level 1, Level 2, Level 3, Level 4).

Teachers and administrators can also using the group Pacing and Scheduling Screen (PASS) to track needs by content area. This is a particularly useful for reorganizing school and teacher schedules to meet continually changing learner needs.

Since “Smart Groups” adjust automatically by student enrollment status for all teachers and administrators, the instructional demand data is in real time, and the normally complicated best practice of flexible grouping becomes easy.

Here is a quick example students by Math level distribution in one small school. Math class groups can be formed or edited with a click for scheduling as needs change, and students move as they master new content.

Modules for School Improvement Planning

DART modules have been developed to track a wide range of accountability data, individual, group, building and district performance information.

Standardized testing data required for NCLB and other reporting is now stored in DART, and can be used for a variety of intervention planning tasks, RTI tracking and program evaluation. Color coding and other visualization adds assist with data interpretation.

Import fields and quick analysis tools are in place for Alaska’s required statewide tests, such as the Alaska Standards Based Assessments (SBA), and our high school exit exam (HSGQE).

In addition, data analysis screens and storage for the Peabody Picture Vocabulary Test (PPVT), Early Learning Profile (ELP), Early Screening Profile (ESP), are all in place. Storage for Limited English Proficient (LEP) status, and alerts for key Special Education data variables also exist.

Students in levels aligned to the state testing levels in the colored cells. Prior year testing analysis allows us to identify with over 90% accuracy which students are likely to pass the

statewide tests, and identify groups in need of intensive intervention.

Administrators and teachers now have access to School Improvement Planning (SIP) tools at the district, building and classroom level.

The Alaska Department of Education has a DART account, and monitors our SIP documents remotely for those schools that are required to file this accountability paperwork for NCLB compliance. EED staff can view building and teacher SIP plans and data supported results in real time.

Our district uses a direct instruction reading program for grades K-12 called Success for All (SFA). This is similar to Reading First, and other reading systems that require frequent probes of student skill, and manipulation of that data.

DART now has an SFA module for tracking reading data, and for creating quarterly building and classroom “hot lists” for specific intervention.

	sped	PK	KC	KR	1-5	6-10	11-15	16-20	21-25	26-31	32-37
PreK-base	-	-	-	-	-	-	-	-	-	-	-
PreK-first	-	-	-	-	-	-	-	-	-	-	-
PreK-second	-	-	-	-	-	-	-	-	-	-	-
PreK-third	-	-	-	-	-	-	-	-	-	-	-
PreK-fourth	-	-	-	-	-	-	-	-	-	-	-
K-base	-	-	9	-	-	-	-	-	-	-	-
K-first	-	-	9	-	-	-	-	-	-	-	-
K-second	-	-	8	1	-	-	-	-	-	-	-
K-third	-	-	-	-	-	-	-	-	-	-	-
K-fourth	-	-	-	-	-	-	-	-	-	-	-
1-base	-	-	-	5	-	2	-	-	-	-	-
1-first	-	-	-	1	-	-	5	-	-	2	-
1-second	-	-	-	-	1	-	-	2	-	3	-
1-third	-	-	-	-	-	-	-	-	-	-	-
1-fourth	-	-	-	-	-	-	-	-	-	-	-
2-base	-	-	-	-	-	-	-	1	-	-	-
2-first	-	-	-	-	-	-	-	-	1	-	-
2-second	-	-	-	-	-	-	-	-	-	-	-
2-third	-	-	-	-	-	-	-	-	-	-	-
2-fourth	-	-	-	-	-	-	-	-	-	-	-
3-base	-	-	-	-	-	-	-	-	-	-	-
3-first	-	-	-	-	-	-	-	-	-	-	-
3-second	-	-	-	-	-	-	-	-	-	-	-

Like other DART modules, numbers in each cell are hot linked the students with that score, and administrators can quickly and easily group and track the effectiveness of Tier I and Tier II interventions in each quarter.

Patterns of both attendance and discipline for each student can be viewed in a single screen by administrators, teachers and parents in an integrated format.

The letter and color code for each event is displayed, and the school's own calendar is used as an overlay for context. The links in each cell go to the detail screen for any discipline item.

Modules for Required Reporting

Most states and the federal government require schools to report data in order to receive funding for basic operations, and grant-funded program evaluation.

In DART, discipline reports are created for each student that meet all the components of the NCLB Gun-Free Schools Act reporting requirements, and also track the more common, but less serious issues and consequences.

As each event is entered into the system the data is displayed on the calendar above, and the school and district Dashboard for live monitoring.

Data exports for all of Alaska's school enrollment, exit and drop out reporting are done using a simple interface. The data format allows import into nearly any database application.

The Alaska OASIS report, for instance, is created by selecting the window of dates for the mandatory window, and then exporting with a single click.

The web browser then downloads the ".csv" data file, and opens it in the user's preferred spreadsheet program.

Instead of data compilation for this report taking weeks to prepare, BSSD is now able to export the data, and merely spot check for errors before submission Alaska state officials.

Interested in Learning More?

These are just a few of the key features in DART. The system has grown into a feature rich solution that has replaced several proprietary software packages that existed in isolation, and required annual fees.

DART is free, written in Open Source code, and runs on the secure and free Linux / Apache / MySQL / PHP server model.

Contact & Resource Links for DART

DART Tutorials & Demo Server (Version 1.0.0 Only)

http://wiki.bssd.org/index.php/DART_System

DART Launchpad Project Page

<https://launchpad.net/dart>

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